

EnerLITE[†] Debuts for Customer, Saves Three Days and \$50,000; EnerLITE RECOVER[†] Lowers Cost



CHALLENGES

Drill the salt and lower formations in a single interval

Maximize the economics of the EnerLITE direct emulsion system



SOLUTION

EnerLITE direct emulsion system to minimize salt washout and control density below fracture gradient

EnerLITE RECOVER in solids recovery mode to maximize solids removal efficiency



RESULTS

- Three days and \$50,000 saved from eliminated interval and elevated rate of penetration - drill-out to TD in less than six days
- Minimal diesel dilution to control mud weight
- EnerLITE system transferred to next well for reuse

OVERVIEW

Through continued collaboration with a customer in the Delaware Basin, AES Drilling Fluids recommended the EnerLITE direct emulsion system to eliminate a second intermediate casing string. Given the proven performance of EnerLITE in the region, the customer agreed to use the system on an upcoming well in Ward County. To further reduce system cost, AES introduced the EnerLITE RECOVER service to enhance solids control performance and minimize oil dilution.

Surface casing and the salt zones were drilled with saturated field brine. Once past the salt sections, the well was displaced on-the-fly to EnerLITE and drilling continued. While drilling, an electrical issue caused a third party centrifuge to shut down, resulting in a rapid increase in mud weight to 9.9 lbm/gal. Once repaired, the EnerLITE RECOVER service was able to quickly lower the mud weight back to program specifications without aggressive dilution. When EnerLITE RECOVER was running, no additional oil was necessary to control mud weight.

The section was drilled to a total depth of 10,848', including a curve section in six days. The interval was finished three days ahead of plan with an estimated savings of \$50,000. An analysis of thirty 9 7/8" wells drilled with EnerLITE show oil consumption in the bottom 20% due to the EnerLITE RECOVER service, in spite of challenges with the third party solids control equipment.

DETAILS

Prior to introduction, the team reviewed standard operating procedures for the EnerLITE system to prepare the drilling fluid program. Experienced personnel at the rig ensured proper setup to introduce EnerLITE. An AES Drilling Fluids solids control expert performed an audit before the start of the job to verify proper equipment was present to perform the EnerLITE RECOVER job.

The 10 3/4" surface casing shoe was drilled out with a 9 7/8" bit using saturated field brine. Drilling continued with saturated field brine to 4,800' before displacing on-the-fly to the EnerLITE system, maintaining a 9.5 lbm/gal mud weight.

As drilling continued, the EnerLITE RECOVER service was used to control the build-up of drilled solids. Compared to an untreated sample passing through the centrifuge, the EnerLITE RECOVER treatment reduced the effluent density an additional 0.2 lbm/gal. Mud weight was maintained between 9.4 and 9.5 lbm/gal using API 200 screens and the EnerLITE RECOVER service. At 10,167' the BHA was changed to build the curve section with an 8 3/4" bit. Drilling continued to interval TD at 10,848'. 7 7/8" casing was run to bottom and cemented.



Fresh EnerLITE (left) features an initial mud weight that increases as drilled solids are incorporated into the system (right). EnerLITE RECOVER aids to remove these solids to minimize oil additions.





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